

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

ABB AB Legal & Compliance/
Intellectual Property
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) **19-04-2005**

Applicant's or agent's file reference

9591WO/AT/LA

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/IB 2004/003390

International filing date (day/month/year)

18.10.2004

Priority date (day/month/year)

16.10.2003

International Patent Classification (IPC) or both national classification and IPC

H01R 13/03, H01R 39/20, H01R 41/00, C23C 30/00

Applicant

ABB Research Ltd. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

(2005-07-19)

2005-08-16

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/SE

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WRITTEN OPINION OF THE
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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not yet been furnished:

☒ copy of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-56 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-56 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-56 | YES |
| | Claims | | NO |

2. Citations and explanations:

Reference is made to the following documents:

D1: WO 03/046247 A1

Discussion.

The present invention basically refers to electrical contact elements comprising a film of a composite material consisting of a so called MAX-material. This material comprises compounds and/or phases based on the same atomic elements as the actual corresponding MAX-material. That is, the material as a whole is not stoichiometric or comprises amorphous phases. Further, the second composite materials are in the nano-size range, "nanocomposite", c.f. box VIII.

D1, which is considered to disclose the most relevant prior art, relates to a method of synthesising MAX-materials from vapours. It is stated that at relatively low temperatures amorphous phases may be formed by earlier methods (p. 2. ll. 19-28). Therefore, MAX-materials per se according to present claim 1 are known from D2. Further, in D2 it is stated that MAX-materials can be used in contact surfaces in electrical contact elements, see p. 7, ll. 11-21.

However, the present invention differs from what is known in D2 in that composite MAX-materials are used as contact material in electrical contact elements. Because the materials are applied as films or layers at relatively low

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawing or on the question whether the claim are fully supported by the description, are made:

The expression "nanocomposite" is wrongly used. A composite is a mixture of at least two different compounds or phases forming a homogenous material in a macro-scale. A "composite" can not be a single compound or phase.

In claims 53 and 54, directed to a method for creating a thin layer on a contact member, obviously information about the "multielement material" is missing.

The correct naming of Ti is titanium (claim 4) and of P is phosphorous (description p. 1, l. 25).